

CLAIMS

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1. A transformant obtainable by transforming a host, whose polyhydroxybutanoic acid polymerase gene is disrupted, with a recombinant vector containing a polyester polymerase gene, a β -ketothiolase gene and a NADPH-acetoacetyl CoA reductase gene.

2. The transformant of claim 1 wherein the polyester polymerase gene comprises a DNA encoding the following protein (a) or (b):

(a) a protein having an amino acid sequence represented by SEQ ID NO: 2 or 4, or

(b) a protein having an amino acid sequence including deletion, substitution, or addition of one or more amino acids relative to the amino acid sequence represented by SEQ ID NO: 2 or 4, and having polyester polymerase activity.

3. The transformant of claim 1 wherein the polyester polymerase gene comprises the following DNA (a) or (b):

(a) a DNA having a nucleotide sequence represented by SEQ ID NO: 1 or 3, or

(b) a DNA hybridizing to a DNA containing a nucleotide sequence of SEQ ID NO: 1 or 3 under stringent conditions, and encoding a protein with polyester polymerase activity.

4. The transformant of claim 1 wherein the β -ketothiolase gene comprises a DNA encoding the following protein (a) or (b):

(a) a protein having an amino acid sequence represented by SEQ ID NO: 6, or

(b) a protein having an amino acid sequence including deletion, substitution or addition of one or more amino acids relative to the amino acid sequence represented by SEQ ID NO: 6, and having β -ketothiolase activity.

5. The transformant of claim 1 wherein the β -ketothiolase gene comprises the following DNA (a) or (b):

(a) a DNA having a nucleotide sequence represented by SEQ ID NO: 5, or

(b) a DNA hybridizing to a DNA containing a nucleotide sequence of SEQ ID NO: 5 under stringent conditions, and encoding a protein with β -ketothiolase activity.

6. The transformant of claim 1, wherein the NADPH-acetoacetyl CoA reductase gene comprises a DNA encoding the following protein (a) or (b):

(a) a protein having an amino acid sequence represented by SEQ ID NO:8, or

(b) a protein having an amino acid sequence including deletion, substitution or addition of one or more amino acids relative to the amino acid sequence represented by SEQ ID NO: 8, and having NADPH-acetoacetyl CoA reductase activity.

7. The transformant of claim 1, wherein the NADPH-acetoacetyl CoA reductase gene comprises the following DNA (a) or (b):

(a) a DNA having a nucleotide sequence represented by SEQ ID NO: 7, or

(b) a DNA hybridizing to a DNA containing a nucleotide sequence of SEQ ID NO: 7 under stringent conditions, and encoding a protein with NADPH-acetoacetyl CoA reductase activity.

8. The transformant of claim 1 which is a bacterium belonging to the genus *Pseudomonas* or the genus *Ralstonia*.

9. The transformant of claim 8, wherein the bacterium belonging to the genus *Pseudomonas* is *Pseudomonas* sp. strain 61-3 (JCM10015).

10. A method of producing copolymer polyester which comprises the steps of culturing the transformant of any one of claims 1 to 9, and collecting polyester from the culture product.

11. The method of producing copolymer polyester of claim 10, wherein the polyester comprises 3-hydroxyalkanoic acid units with a carbon number of 4 to 12.

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